

21 October 2008

This supplement has been prepared to present scientific and technical news items that may be of more interest to technical personnel at RDT&E activities and the labs, or the medics rather than the broader readership of the basic CB Daily. Due to the nature of the material, the articles, if available online, are usually only available through subscription services thus making specific links generally unavailable. Thus, usually only the bibliographic citation is available for use by an activity's technical library.

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Chem-Bio News– Pandemic Influenza Supplement #32

1. UNIVERSAL VACCINE COULD PROTECT PEOPLE AND PETS FROM DEADLY FLU

PANDEMICS: *"A single vaccine could be used to protect chickens, cats and humans against deadly flu pandemics, according to an article published in the November issue of the Journal of General Virology."*

2. WORLD BANK SAYS FLU PANDEMIC COULD COST \$3 TRILLION: *"An internal report prepared by the World Bank estimates that a severe influenza pandemic could kill 71 million people and cause a recession costing more than \$3 trillion, Bloomberg News reported today."*

3. STRUCTURAL CHARACTERIZATION OF THE 1918 INFLUENZA VIRUS H1N1

NEURAMINIDASE: *"Thus, these high-resolution structures, combined with our recombinant expression system, provide new opportunities to augment the limited arsenal of therapeutics against influenza."*

4. SECURITY REPORT 'STUCK' IN OFFICE [AUSTRALIA]: *"Mr Smith's report is believed to recommend consolidating a "whole of government" approach to national security issues, broadly defined to include not just military and terrorist threats but natural disasters and other events including the outbreak of an influenza pandemic."*

5. 3M AND VAXINNATE COLLABORATE TO DEVELOP FLU VACCINE PATCH: *"3M Drug Delivery Systems has entered into an agreement with VaxInnate Corporation to develop a flu vaccine patch for use against a pandemic flu outbreak."*

CB Daily Report

Chem-Bio News

UNIVERSAL VACCINE COULD PROTECT PEOPLE AND PETS FROM DEADLY FLU

PANDEMICS

News-Medical.Net

October 20, 2008

"A single vaccine could be used to protect chickens, cats and humans against deadly flu pandemics, according to an article published in the November issue of the Journal of General Virology. The vaccine protects birds and mammals against different flu strains and can even be given to birds while they are still in their eggs, allowing the mass vaccination of wild birds."

"The researchers found that the central genes or 'backbone' of the H9N2 virus that infects guinea fowl can protect birds and mice against highly pathogenic strains of influenza. They modified the virus to make it less pathogenic and then used it to vaccinate mice. Three weeks after being vaccinated, the mice were infected with the potentially lethal H1N1 virus - the same virus that caused the 1918 Spanish flu pandemic. All the vaccinated mice survived with no signs of disease. Vaccinated mice also survived infection with the deadly H5N1 bird flu virus, again showing no signs of disease."

The full article can be found at: <http://www.news-medical.net/?id=42057>

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WORLD BANK SAYS FLU PANDEMIC COULD COST \$3 TRILLION

CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)

October 17, 2008

"An internal report prepared by the World Bank estimates that a severe influenza pandemic could kill 71 million people and cause a recession costing more than \$3 trillion, Bloomberg News reported today.

The report says that in a severe pandemic, sagging tourism, transportation, retail sales, and productivity, coupled with worker absenteeism, could reduce global gross domestic product (GDP) by 4.8%, according to Bloomberg.

The new report increases the economic impact estimates made by the World Bank in June 2006. At that time the bank estimated GDP would drop by 3.1%, or about \$2 trillion, according to Bloomberg. The story did not explain why the estimates have changed.

Bank officials estimate that a "mild" pandemic, similar to the Hong Kong flu of 1968-69, could kill 1.4 million people and reduce global GDP by 0.7% in the first year, Bloomberg reported."

The full report can be found at: <http://www.cidrap.umn.edu/cidrap/content/influenza/biz-plan/news/oct1708economy.html>

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STRUCTURAL CHARACTERIZATION OF THE 1918 INFLUENZA VIRUS H1N1 NEURAMINIDASE

By Xiaojin Xu, Xueyong Zhu, Raymond A. Dwek, James Stevens, and Ian A. Wilson

Journal of Virology

November 2008

"Influenza virus neuraminidase (NA) plays a crucial role in facilitating the spread of newly synthesized virus in the host and is an important target for controlling disease progression. The NA crystal structure from the 1918 "Spanish flu" (A/Brevig Mission/1/18 H1N1) and that of its complex with zanamivir (Relenza) at 1.65-Å and 1.45-Å resolutions, respectively, corroborated the successful expression of correctly folded NA tetramers in a baculovirus expression system. An additional cavity adjacent to the substrate-binding site is observed in N1, compared to N2 and N9 NAs, including H5N1. This cavity arises from an open conformation of the 150 loop (Gly147 to Asp151) and appears to be conserved among group 1 NAs (N1, N4, N5, and N8). It closes upon zanamivir binding. Three calcium sites were identified, including a novel site that may be conserved in N1 and N4. Thus, these high-resolution structures, combined with our recombinant expression system, provide new opportunities to augment the limited arsenal of therapeutics against influenza."

The full article can be found at: <http://jvi.asm.org/cgi/content/abstract/82/21/10493>

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SECURITY REPORT 'STUCK' IN OFFICE [AUSTRALIA]

Canberra Times (Australia)

October 21.2008

"Shadow attorney-general Senator George Brandis said the delay in finalising the Government's response to Mr Smith's report was a matter of "grave concern" as it was impeding the implementation of improvements to national security, including in particular counterterrorism arrangements.

Mr Smith's report is believed to recommend consolidating a "whole of government" approach to national security issues, broadly defined to include not just military and terrorist threats but natural disasters and other events including the outbreak of an influenza pandemic.

It argues against the creation of a department of homeland security and a national coastguard long-standing Labor Party campaign pledges outlined in the party's federal policy platform published last year. Mr Smith contends that Australia's security arrangements are functioning well and that a new homeland security agency is not justified, a conclusion already accepted by the Prime Minister and senior ministers. Instead, the report recommends further upgrading the national security role of the Department of the Prime Minister and Cabinet with the appointment of a national security adviser as an associate secretary within the department. The report also recommends appointing a chief information officer to coordinate information security and cyber-warfare. Changes are proposed in

respect to intelligence collection and coordination between border protection and maritime surveillance agencies.”

Link not available.

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3M AND VAXINNATE COLLABORATE TO DEVELOP FLU VACCINE PATCH

Business Wire

October 20, 2008

“3M Drug Delivery Systems has entered into an agreement with VaxInnate Corporation to develop a flu vaccine patch for use against a pandemic flu outbreak. The non-exclusive license agreement provides VaxInnate with use of patented 3M microneedle technology, called 3M Microstructured Transdermal System (MTS) technology, to deliver its M2e universal flu vaccine using a convenient skin patch instead of a traditional injection.”

The full article can be found at: http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news_view&newsId=20081020005983&newsLang=en

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Steve Tesko: Steve.Tesko@anser.org

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